

# Jessica Murphy

2723 Durant Berkeley, CA 94704

jpmurphy@berkeley.edu | (949) 939-3555

---

**OBJECTIVE:** To seek full-time position focusing on automation and sensors in an R&D department that will allow me to apply my leadership and teamwork skills to my knowledge in electrical and mechanical engineering

---

## EDUCATION

UNIVERSITY OF CALIFORNIA, BERKELEY

Berkeley, CA

B.S., Mechanical Engineering, GPA: 3.102

Expected Graduation Date: May 2017

**Relevant Coursework:** Introduction to Robotics | Introduction to Mechatronics | Feedback Controls Systems | Design of Microprocessor-Based Mechanical Systems | Designing Information Devices and Systems

**Technical Skills:** NI CLAD Certified (LabVIEW), Simulink, MATLAB, AutoCAD, SolidWorks, LaTeX, MS Office

## WORK EXPERIENCE

UC BERKELEY

Berkeley, CA

*Lab Assistant, Designing Information Devices and Systems*

September 2016 – Present

- Teach concepts during lab related to imaging, location detection, and capacitive and resistive touch screens
- Troubleshoot issues and clarify concepts for students, collaborating with students and other lab assistants

*Student Research Assistant*

October 2015 – May 2016

- Designed a sensor to be attached to a tennis racket to track swing and ball response
- Researched the functions and programming sensors, specifically those built with accelerometers and gyroscopes
- Tested on-court to approximate hardware error associated with varying sensors, including Adafruit

P2S ENGINEERING

Long Beach, CA

*Mechanical Engineering Intern*

May 2016 – August 2016

- Collected, analyzed, and compared calculations used in the selection of boilers and chillers
- Calculated the load in a space using Trace 700 program and Excel, as well as heat transfer principles
- Collaborated with vendors to select appropriate equipment given heat load data and structural properties
- Evaluated calculations for a feasibility study of a cooling tower addition and selected cooling tower with team

## PROJECTS

CRUISE CONTROL

August 2016 – Present

- Design and fabricate automated car and onboard ball launcher to launch and catch a ping pong ball on a track
- Optimize controls to simulate cruise control, aiming for robustness to maintain speed with large disturbances

AUTOMATED DRINK MIXER

February 2016 – May 2016

- Programmed real-time, multitasking LabVIEW simulation that creates a drink given a recipe
- Calculated real-time-updating percent volume of each ingredient with a visual of the changing volume in the cup

MAGNETIC BALL LEVITATION

November 2015

- Designed a control system for the current input of a magnet to levitate a magnetic ball
- Built a circuit on a breadboard for a functioning magnetic system using diagrams
- Determined values of resistors, capacitors, and transfer function gains using given specifications

SELF-INVERTING PENDULUM

October 2015 – December 2015

- Designed in Simulink a feedback control system for a moving cart to balance a foot-long inverted pendulum
- Achieved functioning system using energy conservation principles, Luenberger observer, and LQR controller
- Developed transfer function for the system using knowledge in both dynamics and controls

## LEADERSHIP & ACTIVITIES

Theta Tau Co-Ed Engineering Fraternity

*Emerging Events Chair*

January 2016 – May 2016

- Executed a campus Rube Goldberg Machine competition, with over 20 participants and 40 attendants
- Fundraised \$1600 through alumni donations through organized alumni competition

Kappa Alpha Theta Women's Fraternity

*New Member Director*

January 2015 – December 2015

- Achieved 90% retention rate among new members of the chapter, a record high for Omega chapter
- Led weekly meetings for 15-40 new members for education about Kappa Alpha Theta history and ritual
- Facilitated communication between new members and active members through email correspondence